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The Tech

Established 1881

Volume 137, Number 26

Thursday, October 05, 2017

WEATHER, p. 2

THU: 79°F | 62°F Partly Cloudy

FRI: 71°F | 59°F Slight Chance Showers

SAT: 73°F | 63°F Mostly Cloudy

Survey prompts meal plan revision

DSL considering roll-over meal swipes and dining dollars

By Jessica Shi

The Division of Student Life (DSL), in coordination with student representatives on the Dormitory Council (DormCon), is currently engaged in a Food & Dining Review process. Some changes being considered include roll-over meals and "dining dollars" to spend at retail locations.

The first visible, major outcome students can expect to see are revisions to the existing meal plan structure, with specifics to be announced this winter or spring.

One "very likely" change is the introduction of a meals per semester system in addition to the current meals per week system, said Joe Murphy '19, a DormCon dining co-chair. Under this alternative, meals would rollover instead of expiring at the end of each week, allowing students to more flexibly choose when to use their swipes.

The new options currently being considered range from 100 to 200 meals per semester, Murphy said. For context, a Full 19 plan translates to approximately 299 meals per semester, and an Any 14 plan translates to approximately 220 meals per semester.

Another proposed change, which Murphy said is still "up in the air," would eliminate the distinctions between the Any (swipes can be used for any meal) and Basic (swipes can only be used for breakfast and dinner) tiers in favor of Any plans only.

The two tiers were concluded to be comparable in terms of cost. "If it could be done without incurring a large cost increase, it is likely that Basic plans would be eliminated to give everyone the full flexibility offered by the Any plans and simplify the plan options in light of other options becoming available," Murphy explained.

These potential shifts are in line with the results of a voluntary, campus-wide survey on students' dining habits and preferences conducted last March by the DSL and Envision Strategies, a consulting firm.

Approximately 29% of undergraduate respondents living in dining hall dorms skip lunch, according to presentation slides of key survey findings published on the DSL website. This result is "not surprising," the slides said, given that approximately 50% of meal plan holders are on a meal plan that does not include lunch.

Comparatively, approximately 13% of undergraduate respondents living in a cook-for-yourself community and 2% of graduate respondents skip lunch.

The survey also asked students to provide "feedback on some new ideas."

Dining, Page 2

Nobel Prize in physics awarded to LIGO researchers

MIT's Rainer Weiss shares prize with Caltech profs

By Dennis Overbye
THE NEW YORK TIMES

Rainer Weiss, a professor at the Massachusetts Institute of Technology, and Kip Thorne and Barry Barish, both of the California Institute of Technology, were awarded the Nobel Prize in physics on Tuesday for the first direct observation of ripples in space-time known as gravitational waves, which were predicted by Albert Einstein a century ago.

In announcing the award, the Royal Swedish Academy called it "a discovery that shook the world."

In February 2016, when an international collaboration of physicists and astronomers announced that they had recorded gravitational waves emanating from the collision of a pair of massive black holes a billion light years away, it mesmerized the world.

Weiss, 85, Thorne, 77, and Barish, 81, were the architects and leaders of LIGO, the Laser Interferometer Gravitational-wave Observatory, the instrument that detected the gravitational waves, and a sister organization the LIGO Scientific Collaboration of more than a thousand scientists who analyzed the data.

Weiss will receive half of the prize of 9 million Swedish Kronor and Thorne and Barish will split the other half.

Weiss was born in Berlin in 1932 and came to New York by way of Czechoslovakia in 1939. As a high school student, he became an expert in building high-quality sound systems and entered MIT intending to major in electrical engineering.

MAHI SHAFIULLAH—THE TECH

Rainer Weiss, professor emeritus at MIT, chats animatedly during an Oct. 3 lunch hosted by the physics department to celebrate his Nobel win earlier that day. The entire MIT physics community was invited to the lunch, with more than a hundred students and faculty passing through the Marlar Lounge to congratulate and to take selfies with the laureate.

He later went to work in a physics lab and wound up with a Ph.D. from MIT.

Thorne was born and raised in Logan, Utah, receiving a bachelor's degree from Caltech and then a Ph.D. from Princeton under the tutelage of John Archibald Wheeler, an evangelist for Einstein's theory who coined the term black holes, and who initiated Thorne into their mysteries. "He blew my mind," Thorne later said.

Barish was born in Omaha, Nebraska, was raised in Los Angeles and studied physics at the University of California, Berkeley, getting a doctorate there before joining Caltech. One of the mandarins of Big Science, he had led a team that designed a $1 billion detector for the giant Superconducting Supercollider.

Reached by telephone by the Nobel committee, Weiss said that he considered the award as recognition for the work of about a thousand people over "I hate to say it — 40 years."

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Hasan Minhaj calls attention to refugees in his stand-up routine

'Daily Show' comedian performs at Kresge to sold-out audience

By Sandhya Kalavacherla

Hasan Minhaj performed at Kresge Auditorium last Saturday at 8 p.m. as a part of MIT Undergraduate Association's FallFest.

Hasan Minhaj is an American comedian, best known for serving as the MC for the 2017 White House Correspondents' Dinner and his Netflix stand-up comedy special, the Homecoming King. Minhaj currently serves as a Senior Correspondent on The Daily Show.

This comedian and political activist was well-received by the MIT community. In fact, his show at MIT last Saturday was sold out weeks in advance, and attendees began lining up outside Kresge at 6 p.m.

Audience members were generally restless during the opening act for Minhaj —a 30-minute stand-up routine by James Austin Johnson, a comedian from Los Angeles.

"Anything seemed funny after that," one student told The Tech.

Minhaj presented a roughly 30-minute set accompanied by a slideshow presentation. He later opened up the floor to a question and answer session with the audience.

Minhaj opened his set by recounting his flight back to New York City from Alabama. He explained how the other passengers on the plane were uncomfortable with Minhaj's mother speaking to him in Urdu on speaker phone.

He recalled feeling guilty for responding in English and quickly hanging up on his mother. He then pointed out that he saw a fellow passenger using a Samsung Galaxy Note 7 on the flight. Minhaj wondered why this phone wasn't making anybody else uncomfortable.

He then reasoned that "just because one Samsung Galaxy Note 7

Hasan, Page 2

Cross-registered classes can now be petitioned for HASS-A credit

Students may now petition art courses taken at Harvard, Wellesley, or the Massachusetts College of Art and Design (MassArt) to count for the HASS-A requirement.

Previously, subjects taken via cross registration could only be counted as HASS electives, which fulfill the 8 subject HASS requirement but do not fulfill the HASS distribution component.

"We'll be considering petitions on a case-by-case basis. We'll take into account whether a similar class exists at MIT and whether the class emphasizes expressive and aesthetic techniques, among other things," a representative of the Office of the HASS Requirement told *The Tech* two weeks ago.

The change was enacted due to a lack of traditional art courses offered for-credit at MIT. While the SAA (Student Arts Association) offers ceramics, drawing, painting, and photography classes held at the student center, they are not for-credit and require payment to enroll.

Last spring the music department added 21M.601 (Drawing For Designers), an art studio course that inspired the creation of murals underneath E17 and building 66, known as the Borderline Project.

"On the first day, the teacher asked the students why were we here," said Julia Rue '18 in an interview with the DSL. "And a lot of them had really similar answers. It was basically, 'I used to do art in high school, and I want to continue it here now at MIT, but I didn't really have the chance,'" she said.

"We want students to have options," said the representative, who asked not to be mentioned by name. "Cross-registering is by no means easy. It takes time and paperwork, but the flexibility is there."

—By Amy Shim

IN SHORT

Add date is Friday, Oct. 6. Remember to check your registration on WebSIS.

Buses will replace Red Line service between Park Street and Kendall/MIT stations on weekends beginning Friday, Sept. 29 through Sunday, Dec. 21 due to the Longfellow Bridge Project.

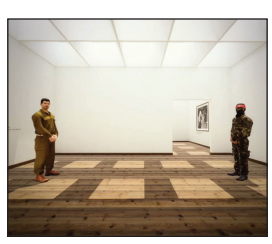
Send news and tips to news@tech.mit.edu.

SPACEX TALKS MARS TRAVEL

The return journey will be free. **SCIENCE, p. 4**

MIT MUSEUM VR EXHIBIT: FACE "THE ENEMY"

Witnessing global conflicts through virtual lens humanizes the people caught up in the violence on both sides. **ARTS, p. 7**



A TENDER OPENING

Ready your tastebuds: Korean restaurant BB.Q Chicken has come to Boston. **ARTS, p. 6**

INDIGENOUS PEOPLES' DAY

For some reason, MIT still calls it Columbus Day. Happy long weekend!

SECTIONS

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WEATHER

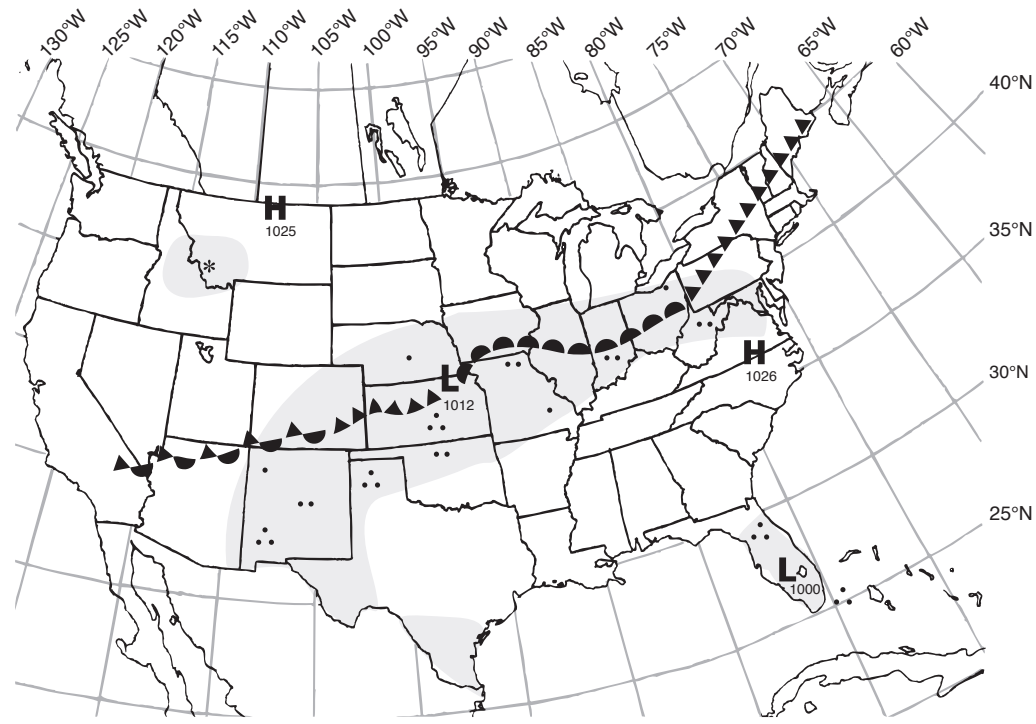
Slight chance showers to come, Nate's fate unknown

By Charlotte Minsky and Phi Xu

Today, we can expect continued warm, sunny conditions as we cling to the last vestiges of summer. On Friday and Saturday, we will experience a brief cooldown with highs in the 70s as cooler air pushes in behind a cold front. Beginning Sunday, warmer conditions will return as highs increase to the upper 70s before another system sweeps in. Throughout the entire forecast period, a small chance of showers will persist, but they should not bring meaningful rain to the Boston area. Elsewhere across the US, rain and showers will progressively move throughout central United States over the next few days, as cooler air pushes into the Great Plains. Looking further abroad, a tropical system has formed off the coast of Nicaragua and will continue north in the coming days. The storm, which already is or will likely become Nate, will possibly strengthen and approach the Gulf Coast region early next week. It may bring a risk of heavy rain, rip currents, and tornadoes to a wide region along its path.

Extended Forecast

Today: Partly Cloudy. High around 79 °F (26 °C). Winds W at around 10 mph.
Tonight: Partly Cloudy. Low around 62 °F (17 °C). Light W winds.
Tomorrow: Slight Chance of Showers. High around 71 °F (22 °C). Low around 59 °F (15 °C). W Winds around 5 mph.
Saturday: Mostly Cloudy. High around 73 °F (23 °C). Low around 63 °F (17 °C).
Sunday: Mostly Cloudy. High around 78 °F (26 °C).



Situation for Noon Eastern Time, Thursday, October 05, 2017

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	Trough	Snow / Rain	Fog
L Low Pressure	Warm Front	Showers	Thunderstorm
§ Hurricane	Cold Front	Light	Haze
	Stationary Front	Moderate	Compiled by MIT Meteorology Staff and *The Tech*
		Heavy	

DSL contemplates meal plans for cook-for-yourself students

Dining, from Page 1

One such idea is a "Grab & Go Station," where students could use a meal swipe to take 4 or 5 items on the go; approximately 59% of meal plan holders positively indicated that they would like to have such an option on main campus (east of Massachusetts Avenue) for lunch.

Another idea is "Dining Dollars," which could be added as an additional component in meal plans, separate from swipes, and allow students to buy items à la carte from retail locations on campus; approximately 58% of meal plan holders expressed interest.

Each of these options present logistical challenges, Murphy said, but they are part of a larger priority "to make your meal plan useful in other places than house dining halls."

"We are also looking to create meal plans that are specifically designed for students in our cook-for-yourself communities, which will remain completely voluntary," said Peter Cummings, executive director of administration for the DSL.

In conjunction with these discussions, the DSL is also in the preparatory stages of selecting a vendor for a new dining contract. Requests for proposal (RFP) should be sent out by the end of this month, according to Cummings.

Then, interested vendors will bid on the RFP. Likely candidates — major companies that are viable to service this campus — include Bon Appétit, the current house dining provider, whose original contract with MIT expired in 2016 and was renewed for a period of two years; Aramark, the current provider for several retail cafés on campus; and Sodexo, Cummings said.

"Our goal with the RFP is to bring house dining and some elements of the retail outlets under one contract," Cummings explained. More broadly, the DSL also "really wants a dining program that effectively and efficiently supports students' dining throughout the day — we want to make it seamless to students. Right now, it's not seamless."

In addition to factors of cost and food quality, Cummings said that MIT is looking for a vendor with "corporate philosophies and actions on issues around social responsibility that are in alignment with MIT's values," as demonstrated through good food sourcing and fair labor practices; a "track record of being innovative"; and a desire to "bring the dining experience closer to the students," such as through test kitchens and cooking demonstrations.

For students, regardless of which vendor the DSL ultimately chooses, the expectation is that the quality of food in house dining will be maintained, Cummings said.

For dining and retail employees, standard practice dictates that management staff often change with a change in companies, but service staff, who are unionized, may stay on if they wish.

If progress continues according to schedule, the bidding and decision-making process will culminate with a new dining contract taking effect on July 1, 2018.

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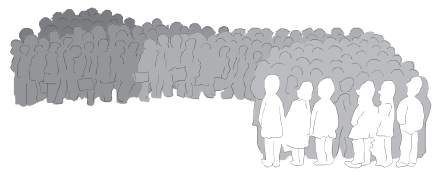

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'You've made it,' Minhaj says to MIT students

Hasan, from Page 1

blows up, it doesn't mean they're all going to blow up."

He used this subtle jab to transition into the refugee and immigration debate, and showed several clips from American media outlets that perpetuate the idea that refugees posed a threat to American safety.

In response, he presented a comical comparison of the statistics of the causes of deaths in America, and pointed out how the number of people who have died from less politically-charged causes, such as being buried alive or choking on food, is exponentially higher than those who have died at the hand of a refugee.

Minhaj further lamented the double standard in how we view those who commit acts of extremism — white males who commits acts of terrorism are labeled as "lone wolves," while people of other races who commit acts of terrorism suddenly come to represent their race as a whole.

Minhaj ended by urging that we give these refugees and immigrants a chance, as our nation was built by refugees and immigrants who were given a chance generations ago.

Audience members were generally impressed by Minhaj's spontaneity during the question and answer session.

Attendees lined up at the mic and asked Minhaj several questions, ranging from how he balances his roles as both a comedian and a political activist to what his favorite kebab is.

One MIT student asked Minhaj to reveal what question he would like to ask an MIT student, to which Minhaj asked, "How does it feel to know that you've made it?" — a response that elicited a long applause from the audience.

Others thanked Minhaj publically for being a role model and working to advocate for not only for the Muslim community but also for other minorities. One audience member even climbed up on stage to given Minhaj a hug.

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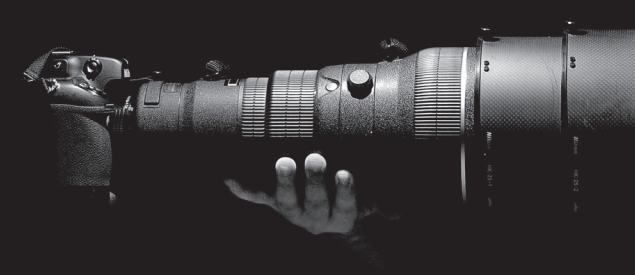

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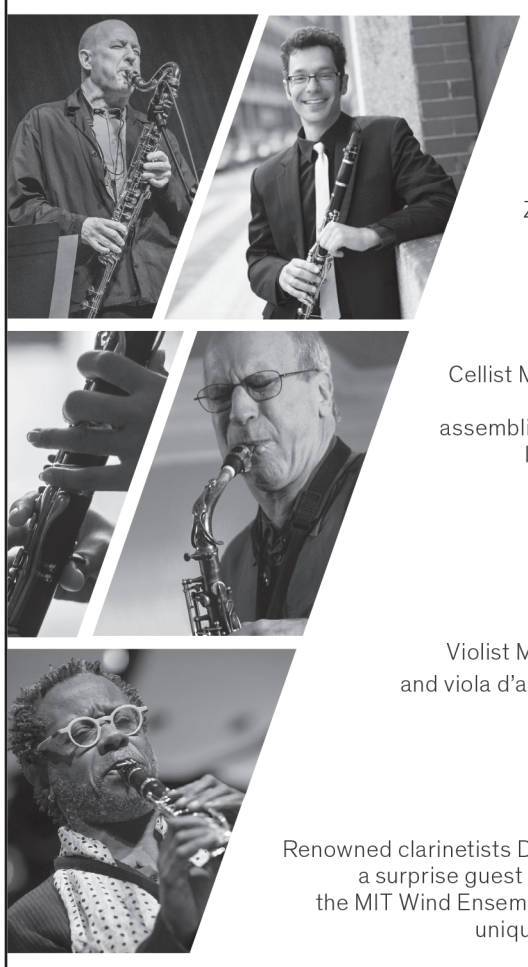

OCTOBER 12

JOHNNY GANDELSMAN AND SARAH CAHILL WITH MIT GAMELAN GALAK TIKA

A centennial celebration of composer Lou Harrison and his groundbreaking works for gamelan and western instruments, performed on gamelans built by the composer. The concert includes a world premiere composed by Evan Ziporyn and is co-presented with the Institute of Contemporary Art/Boston.

DECEMBER 1

MAYA BEISER IN COLLABORATION WITH SKYLAR TIBBITS AND THE SELF-ASSEMBLY LAB

Cellist Maya Beiser's 2016–18 Mellon Distinguished Visiting Artist Residency culminates in a collaborative performance featuring responsiveself-assembling materials from Professor Skylar Tibbits's Self-Assembly Lab and lighting designed by MIT Music and Theater Art's Joshua Higgason.

FEBRUARY 24

MARCUS THOMPSON FACULTY RECITAL, VIOLA & VIOLA D'AMORE WITH ELENA RUEHR, WILLIAM CUTTER AND EVAN ZIPORYN

Violist Marcus Thompson presents an evening of music for solo viola and viola d'amore with works by Vivaldi, Feldman, Vaughan Williams and featuring a Boston premiere by Elena Ruehr.

MAY 11

THE GREAT CLARINET SUMMIT

Renowned clarinetists Don Byron, Evan Ziporyn, Billy Novick, Eran Egozy and a surprise guest artist along with the MIT Festival Jazz Ensemble and the MIT Wind Ensemble (led by Music Director Frederick Harris, Jr.). This unique event includes a community play-along piece for attending clarinetists of all ages.

Clockwise from top: Sarah Cahill. Credit: L. Barry Hetherington. Marcus Thompson. Credit: Christian Steinhert. Maya Beiser. Credit: L. Barry Hetherington. The Great Clarinet Summit including Evan Ziporyn, Eran Egozy, Billy Novick, Don Byron and a Mystery Guest.

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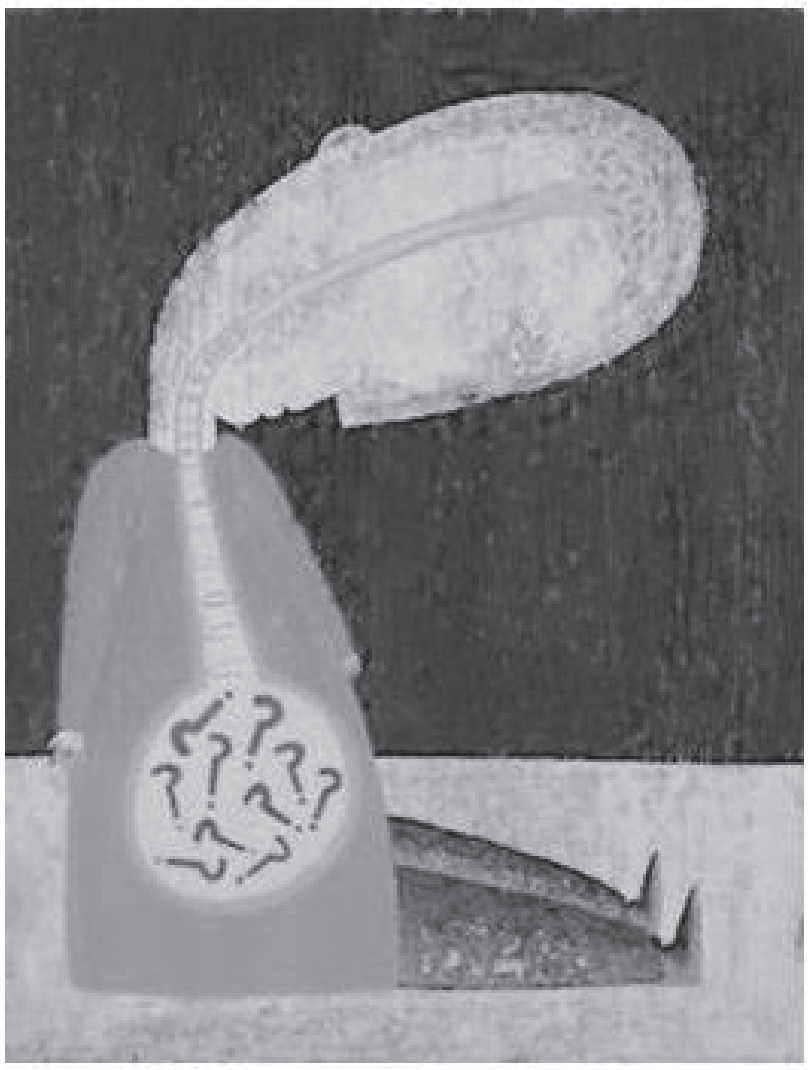

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SpaceX's grand plans for Mars travel

"You're gonna break some people" on the path to progress, COO says

By Meenakshi Sivapriya
NEWS STAFF

President and COO of SpaceX, Gwynne Shotwell, spoke to MIT students about SpaceX's plans to build a home on Mars at the "The Road to Mars" event in 10-250 last Wednesday, as part of Career Fair Week. Two days later, SpaceX founder and CEO Elon Musk presented on the same topic to the International Astronautical Congress in Adelaide.

"When Elon talked in 2002 about taking people to Mars, they thought he was crazy. But now the world has changed dramatically," Shotwell said.

"Mission to Mars is a risk management for the human race. Something will happen on Earth and it would be important for humans to survive and go to a new place," Shotwell told the audience, explaining the main motivation behind the project.

"Humans explore," she added. "There's no better way to do it than by going far away. This is the one place I out-vision Elon. Mars is not it. We should establish a settlement there, but we should go further. My favorite show was Firefly. We should go to other solar systems and galaxies."

What about the consequences back at home? In response to an audience question about SpaceX's impact on smaller enterprises, Shotwell said, "You're gonna break some people, break some companies. But that's the only way to make progress. If you're doing crazy things and making an incredible impact but no one would care, what are you doing it for? Poke someone in the eye, you're doing something right."

Shotwell presented multiple videos of SpaceX's rocket testing through the years, along with a blooper reel of failed attempts. "Failure sucks, especially when you've got customers' payloads on top. But you do learn a lot from failures. It's just best to not blow your customers off," she quipped.

The demand for commercial space travel exists, Shotwell said: "There are a lot of wealthy people who want to pay a ridiculous amount of money to fly around to the moon on the weekends."

Nevertheless, SpaceX aims to reduce the cost of the trip to the equivalent of an economy class plane ticket. To do so, SpaceX plans to reuse and improve the technology of launching stages. "There's a criticality of recoverability. The real key is to be able to reuse the stage, understand them, go through them with a fine tooth comb, and re-fly them," Shotwell said. "We are gonna charge only a one-way to Mars and you can come back for free."

In order to ensure that a round trip is possible, SpaceX will need to equip the passengers with the required resources to return to Earth. Some of these resources will be gathered from Mars itself, Shotwell told The Tech after the talk: "Rocket propellant fuels are liquid oxygen and methane. You can make methane on the surface of Mars using resources from the soil."

SpaceX has another project lined up called the Global Broadband Internet, which will be set up by arranging a "constellation of small satellites" around Earth.

The two key reasons for this project, Shotwell said, was to make "scads of cash" to pay for the trip to Mars and to put a constellation of satellites around Mars and as a bridge between Earth and Mars to enable communication for the Martian colonials.

Do you have a question for President Reif?

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CORRECTIONS

The last issue incorrectly stated Alexander Janko composed the score for "Anastasia." He did not compose it.

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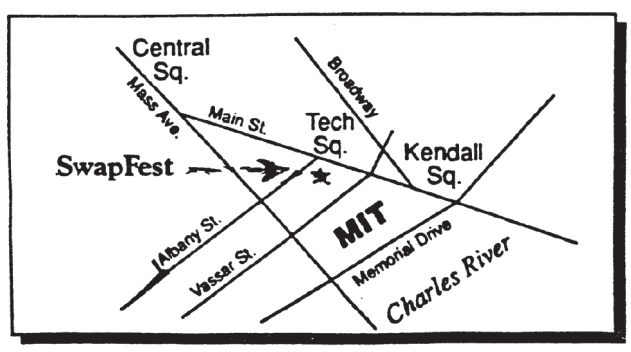

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RESTAURANT REVIEW

BB.Q Chicken introduces Boston to its tender glory

Korean fried chicken place intends to bring something new to your plate

MAHI SHAFIULLAH—THE TECH

Cheeslings, Golden Olive chicken and Gangnam-style wings at BB.Q Chicken — A Korean-style olive-oil fried chicken place opened recently in Allston.

BB.Q Chicken

Korean, $

Every day: 11:00 a.m. – 11:00 p.m.

182 Harvard Ave

Boston, MA 02134

By Mahi Shafiullah

A light blue interior, divided cleanly into two by a row of booths in the middle, welcomes you as you walk in. The music perplexes your ears for a while even if you are caught up with the latest pop music trends. An open bar counter crowns the walkway on one side. On the other side, a table well-lit by hanging lamps and surrounded by tall tools is the vanguard to a long row of smaller, more restaurant-like tables; and invites you to grab something to drink, sit down and chat. For the first 30 seconds when you are not accustomed to the new sight, you may try to decide whether it's a hipster coffee bar or a fried chicken place, and then decide it can be a bit of both.

This is the sight that welcomes you at the BB.Q Chicken, a Korean fried chicken place recently opened in Allston, at 182 Harvard Ave. If you have been to Super88 before, it is quite close. From my experience, BB.Q Chicken is ready to offer you something new with their signature olive oil fried chickens battered with an innovative collection of spices.

I got to try three different dishes of chicken — Gangnam-style wings, the Cheeslings, and Golden Olive Chicken, with sides of pickled radishes and vinegar-coleslaw. The most amazing part overall was of course also the biggest concern of any food lover at a fried chicken place — the chicken. All three dishes contained one of the juiciest chicken meat I have experienced at a fried chicken place. It was cooked thoroughly and came in both white and dark variants over the three dishes, and even a merciless critic like me couldn't find much to complain about.

The Gangnam-style wings, despite being cheesily named, were not the cheesiest (that was the Cheeslings). They were thinly coated with spices and chili and fried to a light brown perfection. If you are bothered by the appearance of chili in your chicken, you can remove it and completely forget about the spiciness. But, if you are someone like me, to whom spiciness is a synonym for life, you will love every single one of them. Even when we all know Gangnam-style wings will probably never be as popular as its namesake, I can always hope it will.

The signature dish of BB.Q chicken, Golden Olive Chicken, is a must if you like a sense of dissonance between your sense of sight and taste. On the surface, it looks the same as any traditional fried chicken with a thick, golden-brown layer of crunchy batter. With the first bite, that illusion vanishes as you taste the lightness of olive oil welding the chicken with the fried batter. This good feeling may persist as long as you don't have a surprise encounter with a lost clutter of spices in a bite as I did.

The Cheeslings were the source of sweet-and-savory goodness in the bunch. I enjoy cheese in moderation, so the golden-yellow tenders fried in a cheesy batter was obviously not my favorite. But, if you are someone who enjoys the powdery simplicity of parmesan or the smooth texture of mozzarella, you might enjoy the combined texture over the juicy chicken that dominates the Cheeslings.

None of the chicken dishes were as spicy as Bonchon's spicy chicken, although that might have been because of my specific request. Instead, BB.Q Chicken offers a subtler sensation on the taste buds, which the use of olive oil might have hinted at earlier. With a variety of seating arrangements, innovative offerings of fried chicken and a hospitable attitude, BB.Q chicken might be the next stop in your nights out if you're open to new experiences.

CONCERT REVIEW

Can I interest you in an instrumentalist's revolution?

The Boston Symphony Orchestra performs Beethoven's *Piano Concerto No. 4* & Shostakovich's *The Year 1905*

Beethoven's *Piano Concerto No. 4* & Shostakovich's *The Year 1905*

Boston Symphony Orchestra

Sept. 29, 2017

Boston, MA 02134

By Torri Yearwood

As usual, hearing the orchestra warm up is an entertaining prelude to the concert. The strings playing frantic and chaotic runs are occasionally overshadowed by a horn crying out or a flute furiously chirping away, but today, something was underneath it all: the ominous beating of drums. The bass drum was tuned to its booming magnificence, the timpani scaled across its range, the snares tested. In addition to this slightly unusual sound a grand piano dominated center-stage, taking the conductor's usual spot as center of attention.

Wordlessly, the conductor, Andris Nelsons, and tonight's piano virtuoso, Paul Lewis, took to the stage in a shower of applause as the anticipation of the crowd rose rising. Both took their positions, the lights dimmed, and silence fell. Softly, Lewis introduced a simple melody, short and sweet, to be picked up by a hushed orchestra, building lightly at first, then grandly, growing dramatically in the strings. Lewis then re-entered, joining in, scaling up and down the piano with speed and vigor to match the violins, all the while playing a counter-melody with his left hand. In all this, the piano felt almost like a teacher, and the orchestra its students, as it passionately outlined beautifully complex melodies and counter-melodies, using its full range, as the orchestra repeats and develops their own ideas.

In the second movement, this dialogue becomes an argument. The orchestra angrily presented its theme in contrast to the piano's quiet pleading, which eventually tamed the orchestral beast. When each the piece concluded, both conductor and soloist walked off the stage . Surprisingly, the pianist then returned for an improvisation on the first theme of the piece, again exploring the complete instrument briefly, laden with tasteful chording and counter-melodic vigor. An ocean of applause crashed down on the stage to this conclusion of the dramatic piece.

The intermission came and went, building suspense as the piano disappeared into the left wing, bringing the full stage in view. The next piece was *The Year 1905* by Dmitri Shostakovich. Unsurprisingly, it details the prelude to the Russian Revolution, Bloody Sunday. With this in mind, I sat anticipating this musical rendition of one of the major historical turning points of the 20th century, as the lights dimmed and the strings began.

Immediately, the tone was set. The orchestra sounded like an organ, and big, dark chords filled the hall. Occasionally, dissonance entered these oppressive chords, giving the impression of dissent, counteracted by a regal melody from the trumpets, all underscored by the dark rolls of thunderous timpani. Intermittently, the winds and high strings would interrupt with variations on folk tunes, reminding the audience of the rich and varied cultures of Russia, even if the autocracy was a constant undertone.

This back-and-forth of expression and repression came to a head in a whirlwind of sound. The trumpets, like gunshots firing into a confused crowd, cut clear above the chaos of the orchestra, shouted from section to section, until — quiet. The low strings began a pizzicato variation on the orchestra's earlier palace theme with impressive unity, I might add), giving it a darker, more morbid tone.

The conflict is restated as a retelling: a more orderly, more furious , more sinister dramatization of the events of Bloody Sunday. Restatements of the regal theme in the trumpets follow, along with a mourning tune, for all those lost (including, allegedly, Shostakovich's father). This relative serenity is interrupted by an explosion of the percussion section over an equally loud orchestra; the people invigorated by the outrage of the events of the ninth of January. This passion and energy is once more quieted (although not quite successfully) by the regal theme, rife with dissonance.

The themes further evolve, with tension rising and falling, giving and taking, until a new theme, built on Bloody Sunday's hope theme, angrily marches forth, the snare lending it a military zeal. I can describe this as nothing other than revolution, fully fledged, organized, and malevolent, dramatically eliminating any essence of the regal theme.

However, in the end, the palace theme returned: after conflict, time, and revolution, still the same palace — its chords still rife with oppressive richness and dissatisfied dissonance.

This was a performance to be reckoned with. The performers delivered all of the emotion and story-telling of an opera wordlessly, telling the history of a people with their instrumentation. While the piano concerto was dramatic and, for lack of a better term, very Beethoven-esque, it was blown out of the water by the majesty and conflict of *The Year 1905*.

Next week's performance is Arlene Sierra's *Moler*, Tchaikovsky's *Violin Concerto*, and Rachmaninoff's *Symphony No. 2*.

VIRTUAL REALITY EXHIBIT REVIEW

Face-to-face with 'The Enemy'

Virtual reality exhibit humanizes global conflicts

COURTESY OF KARIM BEN KHELIFA

Two interviewees from the Israel/Palestine conflict in *The Enemy*.

The Enemy

MIT Museum,

Cambridge, MA

Oct. 5 – Dec. 31, 2017

By Ivy Li and Patricia Gao

Walking by the MIT Museum is intriguing this fall — a quick peek through its Mass Ave windows shows patrons decked out in heavy goggles and backpacks meandering through a mostly empty space. They're participating in The Enemy, a virtual reality (VR) experience intended to inform people about perspectives of war. We are about to join them.

Before entering the exhibit, we take a survey that determines how it will be set up for us: the VR world of The Enemy contains three rooms which appear in a user-tailored order. Even the lighting in the virtual museum is determined by the survey answers and contributes to the interactive journalism.

Inside, we meet and interact with the holograms of six real fighters — one from each side — in three ongoing conflicts (those of Israel/Palestine, the Congo, and El Salvador). We hear back-and-forth interviews wherein they discuss their history with violence, their thoughts about enemies, and their simple hopes and fears in life. The experience is meant to encourage discussion on violence, humanizing the people involved in these conflicts.

The voice on the other side of the interviews is photojournalist Karim Ben Khelifa, who developed the project during his artist residency at MIT. Khelifa collaborated with MIT Professor Fox Harrell to bring his idea to life; beyond the VR exhibit, The Enemy exists in an augmented-reality smartphone application.

Though undergoing The Enemy is stressful at times, it is ultimately inspiring. By virtual interactions with the interviewees, we gained a glimpse of how it is to live in a real conflict. Empathy is so important in this period when cultural misunderstandings run rampant. The Enemy gives names and faces to statistics in the news, making current conflicts much more personal.

We encourage you to experience *The Enemy*, which premieres in North America at the MIT Museum this October.

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/ˈspôrts ˌrīdərs/

noun

noun: sports writers

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Tech's MLB

By The Tech Sports staff

ain the MLB Postseason. In the Americ
ivision Series against Minnesota with e
heir opponents, the Texas Rangers, reco
me 5 against the Tampa Bay.
League, the Philadelphia Phillies swept
ncluding a ho-hitter by Roy Halladay. Th
ries against Atlanta in which every gam
ns will claim their league pennant and
staff weigh in, with department braggin

Can you find the typo? (Answer is below)

***The Tech* is looking for copy editors!**

E-mail *join@tech.mit.edu*

"ho-hitter" in the second line of the second paragraph should be "no-hitter"

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Vice President and General Counsel, MIT

Dan Berger, Esq.
Immigration Attorney, Curran & Berger LLP

Cynthia Barnhart
Chancellor, MIT

Christopher Capozzola
Associate Professor of History, MIT

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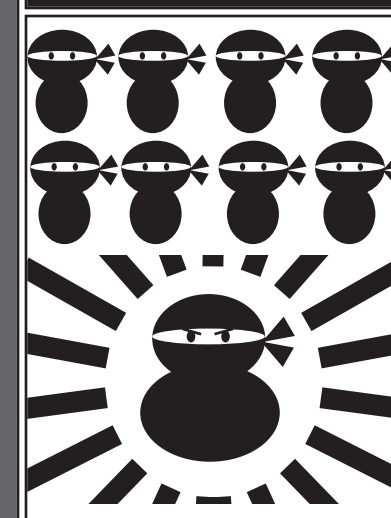

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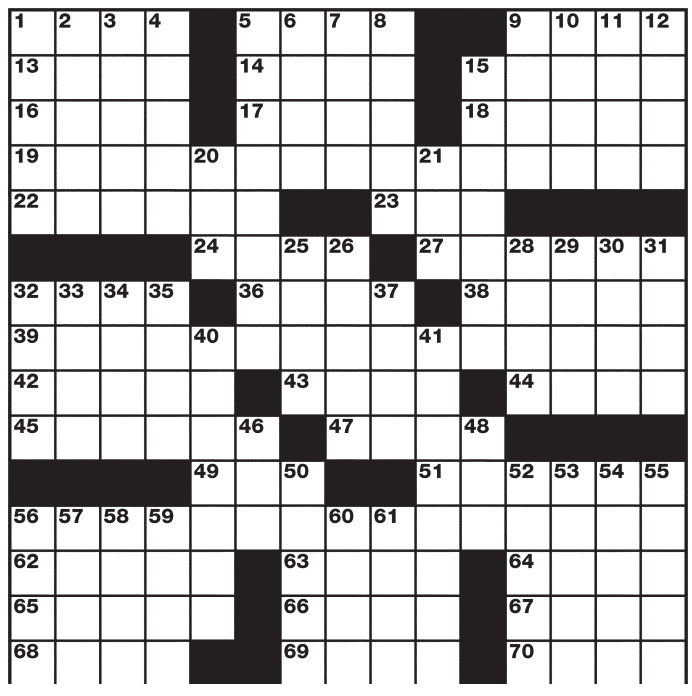
School of Engineering contact: Gregory Soloviev, x4-7108, soloviev@mit.edu
School of Science contact: Michael Bishop, x3-8900, bishopm@mit.edu

Advance Publicity by Billie Truitt

Solution, page 12

ACROSS
1 ". . . __ all possible"
5 Fail to connect with
9 Not ajar
13 Have a little something
14 Enduring symbol
15 Driving hazard
16 Camera setting
17 Pop singer Del Rey
18 Product like blush
19 It needs immediate attention
22 Bully's tactic
23 Patch, perhaps
24 Downsize
27 CSI facility
32 Long story
36 Subsequent
38 Star Trek role
39 Words on a "No trespassing" sign
42 Protective sponsorship
43 Dragon's home
44 Major muddle
45 Agreed
47 Meet the Press host
49 Opposing side
51 "But still . . ."
56 Upscale marketing strategy
62 Golf coup
63 Barbecue spoiler
64 Coveted role
65 Phantom of the Opera's instrument
66 Danish shoe brand
67 Pasture portion
68 Brooding spot
69 Sign of spring
70 Adult-to-be

DOWN
1 Not suitable
2 Rural youth club
3 Late bloomer
4 That and that
5 Combative
6 Confident phrase
7 Album track
8 Sudden bites
9 "Poor" guy
10 Total looted
11 Try to sell
12 Be overrun
15 Adult
20 Wear down
21 Sunset shade
25 Be dazed
26 Hemingway, while in Paris
28 "Sorry to interrupt . . ."
29 Draw in
30 Part of MFA
31 Coastal indentations
32 Hot tubs
33 Blueprint datum
34 Nine-Oscar musical of '58
35 Very devoted
37 Jeopardy! contestant contingent
40 With equal frequency
41 Infomercial prompting
46 Garden-pond carp
48 Half of MXII
50 "Snowy" bird
52 Flamboyance, from the French
53 Family member
54 Entangle
55 It's south of Brigham City
56 Lowly worker
57 Almost never seen
58 Incites, with "on"
59 Bedframe piece
60 Taken individually
61 Typesetting measure



Midterms

Solution, page 12

	5		2					6
						1		5
	1			7			8	2
7		2			4		3	1
			1		8			
1	6		7			5		8
8	2			9			5	
5		1						
9					3		1	

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Fall

Solution, page 12

		9	3					5
3				5	1		9	
1	7		4		8			
6	4					3		
	8						1	
		3					7	9
			1		9		6	4
	9		8	4				1
4					5	9		

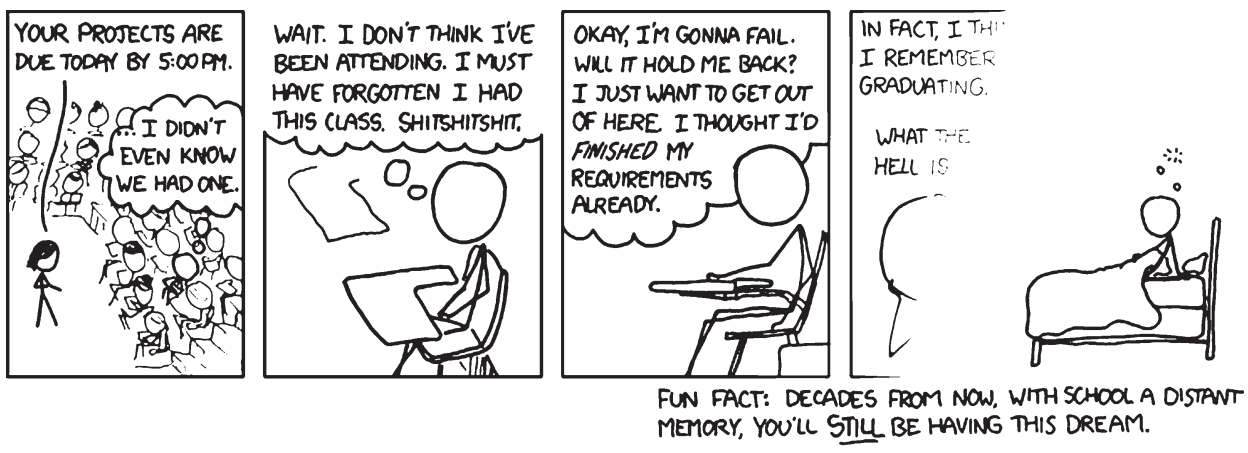
Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

xkcd

A WEBCOMIC OF ROMANCE, SARCASM, MATH, AND LANGUAGE

by Randall Munroe

[557] Students



FUN FACT: DECADES FROM NOW, WITH SCHOOL A DISTANT MEMORY, YOU'LL STILL BE HAVING THIS DREAM.

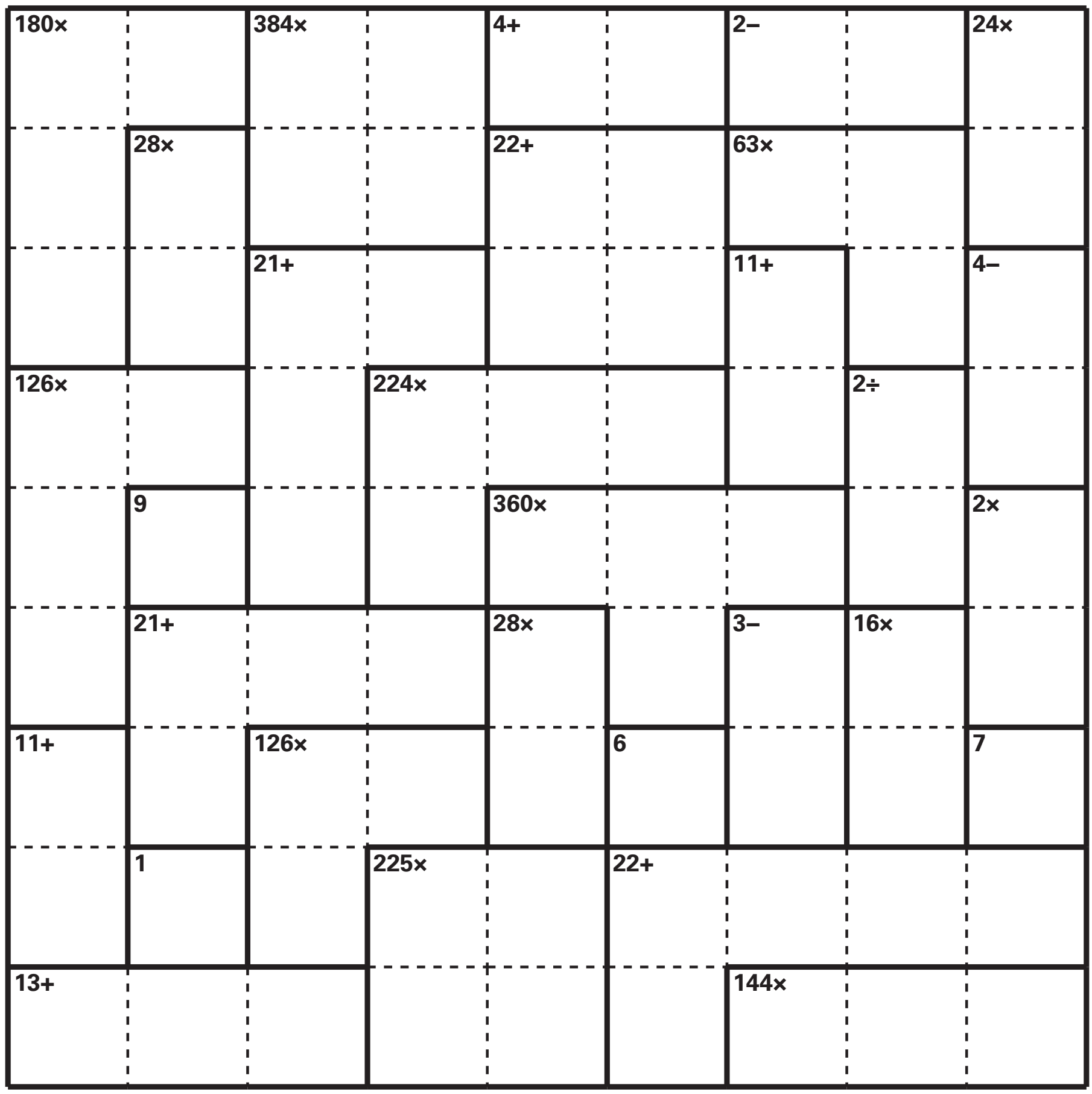
The same goes for the one where you're wrestling the Green Ranger in the swimming pool full of Crisco. You guys all have that dream, right? It's not just me. Right?

FUNFUNFUNF

FUNFUNFUNFUNFUNFUNFUNFUNFUNFUNFUNFUN

Survival

Solution, page 12



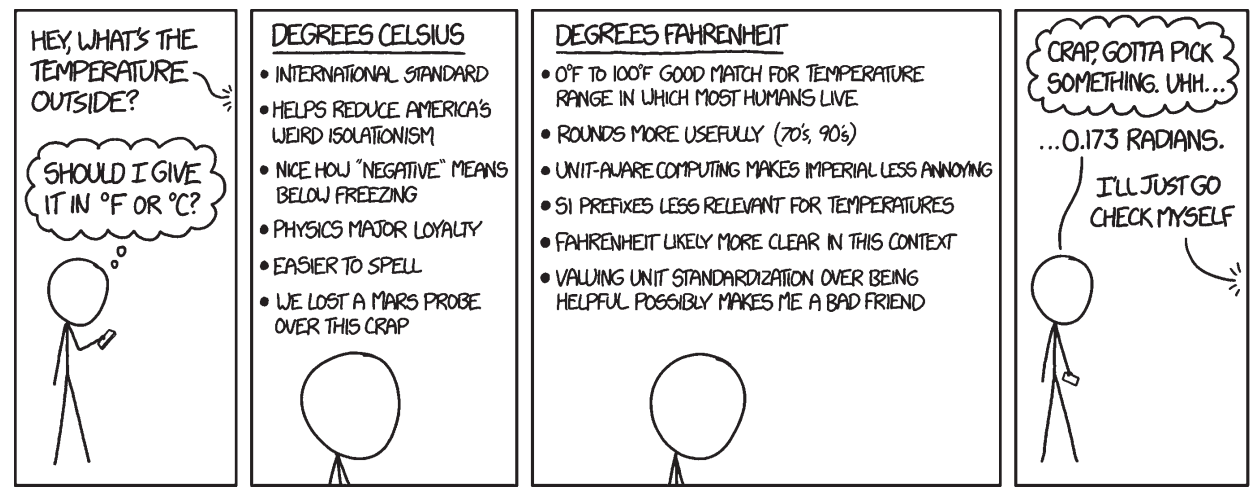
Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

xkcd

A WEBCOMIC OF ROMANCE, SARCASM, MATH, AND LANGUAGE

by Randall Munroe

[1643] Degrees



"Radians Fahrenheit or radians Celsius?" "Uh, sorry, gotta go!"

Self-Driving Sausage by SOYO

PILED HIGHER AND DEEPER

by Jorge Cham

JOSEPHINE YU

Two MIT students at the annual Career Fair in Johnson Indoor Track Sept. 29.

JOHNNY BUI

MIT students wait in 10-250 for the opening of the Oct. 2 lottery to register for the Glass Blowing Seminar, hosted every IAP by the MIT Glass Lab.

JOHNNY BUI

Oby Nwodoh, MIT '21 (left) and her sister Chichi Nwodoh (right) with MIT's first African-American PhD recipient and National Medal of Science winner Shirley Ann Jackson (center) at MIT Media Lab Sept. 26, where Jackson spoke about being a woman of color in STEM.

MAHI SHAFIULLAH – THE TECH

Rainer Weiss, professor emeritus at MIT, was awarded the Nobel Prize in Physics "for decisive contributions to the LIGO detector and the observation of gravitational waves" Oct. 3. Students lined up to take selfies with the laureate at a celebratory lunch.

Know something important we should write about?

(We probably don't know about it.)

Let us know.

news@tech.mit.edu

Solution to Midterm

from page 9

4	5	8	2	1	9	3	7	6
2	7	9	3	8	6	1	4	5
6	1	3	4	7	5	9	8	2
7	8	2	9	5	4	6	3	1
3	9	5	1	6	8	7	2	4
1	6	4	7	3	2	5	9	8
8	2	7	6	9	1	4	5	3
5	3	1	8	4	7	2	6	9
9	4	6	5	2	3	8	1	7

Solution to Advance

from page 9

I	F	A	T		M	I	S	S		S	H	U	T
N	O	S	H		I	C	O	N		G	L	A	R	E
A	U	T	O		L	A	N	A		R	O	U	G	E
P	R	E	S	S	I	N	G	P	R	O	B	L	E	M
T	H	R	E	A	T			S	E	W				
				P	A	R	E		D	N	A	L	A	B
S	A	G	A		N	E	X	T		U	H	U	R	A
P	R	I	V	A	T	E	P	R	O	P	E	R	T	Y
A	E	G	I	S		L	A	I	R		M	E	S	S
S	A	I	D	O	K		T	O	D	D				
				F	O	E			E	V	E	N	S	O
P	R	E	S	T	I	G	E	P	R	I	C	I	N	G
E	A	G	L	E		R	A	I	N		L	E	A	D
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Have questions? Contact Karyn Glemaud at kglemaud@mit.edu

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Solution to Fall

from page 9

8	2	9	3	7	6	1	4	5
3	6	4	2	5	1	8	9	7
1	7	5	4	9	8	6	2	3
6	4	2	9	1	7	3	5	8
9	8	7	5	2	3	4	1	6
5	1	3	6	8	4	2	7	9
2	5	8	1	3	9	7	6	4
7	9	6	8	4	2	5	3	1
4	3	1	7	6	5	9	8	2

Solution to Survival

from page 10

9	2	8	6	1	3	7	5	4
2	4	1	8	3	5	9	7	6
5	7	4	2	6	8	3	1	9
1	3	9	7	2	4	8	6	5
7	9	6	4	8	1	5	3	2
6	8	5	3	7	9	4	2	1
3	5	2	9	4	6	1	8	7
8	1	7	5	9	2	6	4	3
4	6	3	1	5	7	2	9	8

EVENT

Furry First Friday

Relax with four-legged friends from Dog BONES: Therapy Dogs of Massachusetts

October 6, 2-3:30pm
Hayden Library, 14S-100

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